AMENDMENTS TO THE CLAIMS

Please add or amend the claims to read as follows, and cancel without prejudice or disclaimer to resubmission in a divisional or continuation application claims indicated as cancelled:

1. (Currently amended) A portable communication device comprising:

a sigma-delta N-phase shift keying modulator having a non-uniform polar quantizer to produce, based on an integrated signal, a quantized output representing a symbol selected from a set of N symbols, the selected symbol corresponding to a cell of a set of N non-uniform cells covering a complex plane in a non-overlapping manner, wherein said cell corresponds to a phase of said integrated signal.

2. (Original) The portable communication device of claim 1 wherein said N is selected from a group including: 2, 4, 8, 16 and 32.

3. (Currently amended) A portable communication device comprising:

a sigma-delta N-phase shift keying modulator able to convert a baseband input signal into a quantized output signal, the modulator comprising:

an adder able to subtract said quantized output signal from said baseband input signal to produce a difference signal;

an integrator able to integrate said difference signal to produce an integrated signal; and

a non-uniform polar quantizer able to produce said quantized output so that it represents a symbol selected from a set of N symbols according to which of a set of N non-uniform cells the phase of said integrated signal belongs, said N non-uniform cells [[completely]] covering [[the]] a complex plane in a non-overlapping manner.

4. (Original) The portable communication device of claim 3, wherein said N is selected from a group including: 2, 4, 8, 16 and 32.

5. (Currently amended) A transmitter comprising:

a dipole antenna;

a sigma-delta N-phase shift keying modulator coupled to said dipole antenna, said modulator comprising:

a non-uniform polar quantizer to produce, based on an integrated signal, a quantized output representing a symbol selected from a set of N symbols, the selected symbol corresponding to a cell of a set of N non-uniform cells covering a complex plane in a non-overlapping manner, wherein said cell corresponds to a phase of said integrated signal.

6. (Original) The transmitter of claim 5 further comprising:

a switching amplifier coupled to said modulator and to said dipole antenna.

7. (Original) The transmitter of claim 6, wherein said switching amplifier comprises a class-E power amplifier.

8. (Original) The transmitter of claim 6 further comprising:

a bandpass filter coupled to output of said switching amplifier and coupled to said dipole antenna.

9. (Original) The transmitter of claim 5, wherein said N is selected from a group including: 2, 4, 8, 16 and 32.

10. (Currently amended) A mobile telephone comprising:

a dipole antenna; and

a sigma-delta N-phase shift keying modulator coupled to said dipole antenna, said modulator comprising :

a non-uniform polar quantizer to produce, based on an integrated signal, a quantized output representing a symbol selected from a set of N symbols, the selected symbol corresponding to a cell of a set of N non-uniform cells covering a complex plane in a non-overlapping manner, wherein said cell corresponds to a phase of said integrated signal.

11. (Original) The mobile telephone of claim 10 further comprising:

a switching amplifier coupled to said modulator and to said dipole antenna.

12. (Original) The mobile telephone of claim 11, wherein said switching amplifier comprises a class-E power amplifier.

13. (Original) The mobile telephone of claim 11 further comprising:

a bandpass filter coupled to output of said switching amplifier and coupled to said dipole antenna.

14. (Original) The mobile telephone of claim 10, wherein said N is selected from a group including: 2, 4, 8, 16 and 32.

15. (Currently amended) A method comprising:

subtracting a quantized output signal from a baseband input signal to produce a difference signal;

integrating said difference signal to produce an integrated signal; and

producing said quantized output by selecting a symbol from a set of N symbols according to which of a set of N non-uniform cells the phase of said integrated signal belongs, said N non-uniform cells [[completely]] covering [[the]] a complex plane in a non-overlapping manner.

16. (Original) The method of claim 15, wherein said baseband input signal is analog and further comprising:

converting said quantized output signal from digital to analog prior to subtracting said quantized output signal from said baseband input signal.

17. (Original) The method of claim 15, wherein said N is selected from a group including: 2, 4, 8, 16 and 32.

18. (Original) The method of claim 15, further comprising:

using said quantized output signal to select one of N carrier signals each having a frequency and a different one of N phases, thus producing a constant envelope signal at said frequency having variable phase; and

amplifying, filtering and transmitting said constant envelope signal.

19. (Original) The method of claim 18, wherein said frequency is a radio frequency.

20. (Currently amended) The device of claim 1, wherein said non-uniform polar quantizer is able to ~~produce a quantized output representing a symbol selected from a set of N symbols based on a cell of a set of N non-uniform cells corresponding to a phase of an integrated signal, said N non-uniform cells completely covering the complex plane in a~~

~~non-overlapping manner; and to~~ redefine said set of N non-uniform cells in accordance with a phase transition corresponding to said set of N symbols.

21. (Previously Presented) The device of claim 3, wherein said non-uniform polar quantizer is able to redefine said set of N non-uniform cells in accordance with a phase transition corresponding to said set of N symbols.

22. (Currently amended) The transmitter of claim 5, wherein said non-uniform polar quantizer is able to ~~produce a quantized output representing a symbol selected from a set of N symbols based on a cell of a set of N non-uniform cells corresponding to a phase of an integrated signal, said N non-uniform cells completely covering the complex plane in a non-overlapping manner; and to~~ redefine said set of N non-uniform cells in accordance with a phase transition corresponding to said set of N symbols.

23. (Currently amended) The mobile telephone of claim 10, wherein said non-uniform polar quantizer is able to ~~produce a quantized output representing a symbol selected from a set of N symbols based on a cell of a set of N non-uniform cells corresponding to a phase of an integrated signal, said N non-uniform cells completely covering the complex plane in a non overlapping manner; and to~~ redefine said set of N non-uniform cells in accordance with a phase transition corresponding to said set of N symbols.

24. (Previously Presented) The method of claim 15 comprising redefining said set of N non-uniform cells in accordance with a phase transition corresponding to said set of N symbols.